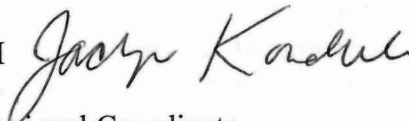


**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2**

DATE: August 30, 2016

SUBJECT: Final Tier 1 Sediment Site Consideration Memo
Eighteen Mile Creek Site, Proposed Plan

FROM: Jaclyn Kondrk, RPM



TO: Ji-Sun Yi, OSRTI Regional Coordinator
Steve Ells, OSRTI Sediments Team Leader

This memorandum demonstrates how the 11 principles outlined in OSWER Directive 9285.6-08, "Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites," were considered for the Eighteen Mile Creek Superfund Site. Region 2 is about to propose a remedy for Operable Unit 2 (OU2) that addresses contaminated sediments in the Creek Channel, contaminated soil along the Creek bank, and contaminated soil at adjacent properties within an area of the Site known as the Creek Corridor. This is the first of two Site remedies that address contaminated sediments, and is an interim remedy for sediments.

Since the proposed remedial action for the Eighteen Mile Creek Site will address approximately 14,500 cubic yards (yds³) of contaminated sediment, it is considered a Tier 1 site (*i.e.*, greater than 10,000 yds³ of contaminated sediment).

Site Background

The Site is located in Niagara County, New York and includes contaminated sediments, soil, and groundwater in and around the Eighteen Mile Creek.

The headwaters of Eighteen Mile Creek consist of an East and West Branch which begin immediately north of the New York State Barge Canal. The Creek flows north for approximately 15 miles and discharges to Lake Ontario in Olcott, New York. A Site location map is provided as Figure 1.

Eighteen Mile Creek has a long history of industrial use dating back to the 19th century when it was used as a source of hydropower. There are several properties along the Creek on which various forms of manufacturing occurred. EPA is addressing the Site in three OUs. This memorandum is being prepared in advance of the issuance of a Proposed Plan for OU2, commonly referred to as the Creek Corridor, which is the approximately 4,000-foot segment of Eighteen Mile Creek that extends from the Canal to Harwood Street in the City of Lockport. The Creek Corridor includes the contaminated sediments within the Creek, and contaminated soil at the following adjacent commercial properties: the former Flintkote Plant Property; the White Transportation Property; the former United Paperboard Company Property; and Upton Park.

OU1 addresses contaminated soil at residential properties on Water Street and the former Flintkote Property Plant Building. OU3 addresses the north end of the OU2 Creek Corridor from Harwood Street in Lockport to the mouth of the Eighteen Mile Creek in Olcott, New York, where it discharges into Lake Ontario (See Figure 2). A Remedial Investigation and Feasibility Study (RI/FS) for OU3 is currently underway.

The Site was finalized on the National Priorities List (NPL) on March 15, 2012. Prior to the Site's listing, New York State Department of Environmental Protection (NYSDEC) conducted investigations of Eighteen Mile Creek Corridor and the aforementioned adjacent properties. NYSDEC issued a remedy addressing the former Flintkote Plant property in March 2006 and a remedy for the remainder of the Creek Corridor, including the contaminated soil at the Water Street properties, in March 2010; however, with the NPL listing and lead transfer to EPA, NYSDEC did not implement these remedies. In order to satisfy federal regulations pertaining to selecting remedy under CERCLA, EPA obtained additional information and conducted supplemental studies. In September 2013, EPA issued a Record of Decision (ROD) for OU1 to address contaminated soil located on the residential properties on Water Street in Lockport, New York. Pursuant to the OU1 ROD, the residents at five residential properties have been permanently relocated and the structures demolished. Construction activities, including off-site transportation and disposal of the debris, and installation of fencing, was completed in September 2015. The OU1 ROD also called for the excavation of contaminated soil at the nine residential properties. However, the OU1 ROD indicated that the soil component would be performed as part of the remedial action for OU2 to prevent the contaminated sediment in the Creek from re-contaminating the soil on the adjacent residential properties during significant precipitation events due to flooding in this portion of Water Street from the Creek.

1. Control Sources Early

The Site is controlling sources early in two ways: by identifying and addressing potential upstream sources of contamination, including polychlorinated biphenyls (PCBs), a primary contaminant of concern; and by phasing the remediation of the Site to address the more highly contaminated upstream areas first.

Upstream Sources

Remedial investigations conducted by NYSDEC and EPA at the Site identified elevated concentrations of contaminants in Creek Channel sediment, Creek bank soil, and adjacent upland properties (Water Street residential properties, Upson Park, former Paperboard Company property, and the White Transportation property). The investigations have revealed fill present within the embankments of the Creek and soil at the above-referenced properties. The material includes ash containing glass, coal, coke, slag, ceramic and other debris. Sampling has revealed elevated concentrations of contaminants of concern in the ash. NYSDEC's RI concluded that contaminated fill material on the adjacent properties via erosion and runoff appears to be the primary mechanism for transport of contamination to the Creek. Investigations dating back as far as 1983 have identified elevated levels of PCBs and other contaminants of concern in properties within the Creek Corridor, though no specific PCB source has been identified.

In 2015, pursuant to EPA's OU1 ROD, the remaining portions of the building at the former Flintkote Plant property was demolished. As per the OU1 ROD, demolition of the building was necessary to provide access to conduct subsurface sampling through the basement floor to confirm whether a contaminant source area beneath the building exists and to perform the necessary removal of asbestos-containing debris in the basement, including the boiler and associated piping. In 2015, EPA conducted test pits and conducted this additional soil sampling. However, the results did not reveal the presence of source material.

As part of the NYSDEC RI, the New York State Barge Canal was investigated as a potential source of contamination to the Eighteen Mile Creek. The headwaters of the Creek originate from two branches immediately north of the Canal. Waters from the East Branch originate at the spillway in the Canal where canal waters join with water from the piped section of Eighteen Mile Creek south of the Canal. The waters from the West Branch originate from the dry dock on the north side of the Canal. Waters from the East and West Branch converge on the south side of Clinton Street. Canal locks are operational during the navigation season from early May to mid-November. During this operating season, sluice structures are opened. When open, the sluice structures draw canal water off near the bottom of the canal and discharge it into the Hall Spillway on the south side of the Canal. There the canal waters combine with flow from the Creek. It has been reported that during operation, the Barge Canal discharges approximately 50 cubic feet per second (cfs) of water into the East and West Branches of the creek. However, during the NYSDEC RI, flow was measured to be up to 200 cfs. The Canal contributes the majority of the flow for the OU2 portion of the Eighteen Mile Creek.

The Canal is drained every year for the non-navigational season to minimize the potential for freeze/thaw effects on the Canal's elevated embankments and to perform routine maintenance on the system structures. If maintenance is needed in the canal, the water level in the Canal is further lowered by removing a "plug" located in the middle of the Canal bottom. The plug drains into the tunnel that connects the headwaters of the East Branch with the junction of the spillway and the upstream waters of the Creek.

The NYSDEC RI report concluded that Canal is not a significant contributor of contamination to the Creek sediments within the Corridor. However, the investigation also concluded that one-time events, such as pulling the canal plug, could have the potential to release potentially contaminated sediments to the Creek. The FS assumed that a sediment release from pulling the Canal plug could be avoided through operational changes (i.e. use of pumps) to prevent such a potential slug release to the Creek.

In 2001, NYSDEC conducted a study of the City of Lockport's sewer system to track down potential sources of PCBs. The study revealed that the City of Lockport combined sewer system periodically discharged untreated storm water overflow into Eighteen Mile Creek during periods of significant precipitation. As a result, in 2006, the City of Lockport began monitoring activities for the CSOs. In the past 15 years, 20 of the city's original 31 CSOs have been separated by installing new sewer line for either the sanitary or storm flow system. Five of the remaining 11 CSOs have the potential to discharge to the Eighteen Mile Creek. One of these five is located

within the Creek Corridor (OU2) and the other four are located within OU3. In addition, the other six CSOs that do not discharge directly to Eighteen Mile Creek are directed to the Erie Canal. As part of the EPA removal action for the Water Street residential properties, EPA has worked with the City of Lockport to find ways to improve their CSO systems to prevent recontamination of the Creek. For example, as a result of this effort, the City of Lockport has welded manhole covers located on Water Street to prevent overflow onto Water Street. CSOs are also monitored by the NYSDEC Division of Water. EPA intends to coordinate with the NYSDEC of Water and the City of Lockport to evaluate monitoring data from the sewer system to confirm that the remaining CSOs are not a significant source of contamination to the Creek.

Remedial Phasing

The Site OUs have been organized to address sources first, followed by addressing the downstream sections of the Creek. As discussed further below, the highest levels of PCB contamination in sediments, and the presence of PCBs on adjacent properties, occurs within the Creek Corridor (OU2), which is why this portion of the Creek is being addressed first.

In August 2013, EPA began performing a removal action at the residential properties located on Water Street to mitigate the threat to current residents of direct contact with contaminated soil. This removal action consisted of placing gravel or clean topsoil with vegetation in areas where residents may come into direct contact with contaminated soil. EPA will maintain the integrity of the cap until the remedial activities selected in the OU1 ROD are implemented. Pursuant to EPA's OU1 ROD, EPA has acquired the properties and the residents have been relocated. The OU1 ROD also called for the excavation of the contaminated soil at these properties. However, the OU1 ROD stated that soil excavation work would be performed at the time of the cleanup of the sediments in the Creek Corridor to prevent the Creek from recontaminating the residential properties. The OU1 Water Street Properties are located within Creek's floodplain, which flood during severe weather events.

2. Involve the Community Early and Often

The community surrounding the Site has been actively involved in the Site since the early 1980s, when it was listed through the NYSDEC. There is no community advisory group (CAG) for this Site at this time.

NYSDEC and EPA have reached out to the local communities to provide information related to the Site and to understand their concerns. As part of EPA's public outreach efforts for the Site, EPA initially held a public information meeting in Lockport when the Site was proposed for listing to the NPL. In addition, a public meeting was held in Lockport in 2013 during the public comment period for EPA's Proposed Plan for OU1. Participation at these meetings has been high and generally, the public has been supportive of the work being conducted by EPA. EPA periodically provides updates to the community through the publication of a Community Update for the Site. In addition, during the performance of the response actions for the Water Street properties and the former Flintkote Plant property building, EPA's On-Scene Coordinator periodically met with local elected officials, residents, and the media to provide up to date information and respond to

inquiries. EPA most recently met with local residents and elected officials in April 2016. These efforts have been well received and have resulted in positive media coverage for the Site.

As part of the public comment period for the OU2 Proposed Plan, EPA will hold a public meeting in the City of Lockport. Additional outreach will occur prior to the start of the OU2 remedial action. EPA anticipates a moderate level of community interest for the OU2 proposed remedy. Potential concerns that the community may raise during the public comment period include; concerns that the cap component of the remedy would not provide enough protection, impacts to habitat resulting from the dredging of contaminated sediments, the existing fish consumption advisory, and impacts to the community during construction related activities such as increased truck traffic. EPA believes that the preferred alternative adequately addresses these issues and will discuss further the rationale for the remedy preference during the public meeting.

EPA's public outreach efforts have included information regarding the fish consumption advisory for the Eighteen Mile Creek. New York State Department of Health (NYSDOH) has a "Don't eat any fish" fish consumption advisory for the full length of Eighteen Mile Creek (including waters above and below Burt Dam). Fish consumption advisories are implemented and managed by the NYSDOH. State representatives have participated in previous public meetings and we anticipate that NYSDEC and NYSDOH will participate in the upcoming public meeting for the OU2 Proposed Plan. Although the OU2 action is not expected to fully address the fish consumption remedial action objection in the Proposed Plan, the fish consumption advisory would continue to provide some measure of protection of human health until concentrations in fish are reduced to the point where the fish consumption advisory can be relaxed or lifted by NYSDOH.

EPA has and will continue to involve the community in our planning process.

3. Coordinate with States, Local Governments, Tribes, and Natural Resource Trustees

The EPA has worked cooperatively with NYSDEC throughout the investigations conducted at the Site. EPA expects NYSDEC to be supportive of EPA's proposal to address OU2.

The Tuscarora Nation and the Tonawanda Seneca Nation have an interest in the cleanup of Eighteen Mile Creek because it is located near their land claim area. The Nations are also interested in the information available on the archeological and cultural significance of the project area.

After the Site was listed on the NPL in 2012, the EPA initiated government-to-government consultation with the Tuscarora Nation and the Tonawanda Seneca Nation relative to Eighteen Mile Creek and areas of concern. To date, the Nations have provided limited input in the review and comment of documents. Recently, EPA hosted a conference call with the Tuscarora Nation to discuss the findings of the remedial investigation, baseline human health risk assessment, and baseline ecological risk assessment. During this conference call, the Tuscarora expressed a concern related to potential adverse effects to ecological receptors at OU2, particularly the swallow and the bat at OU2. These receptors are considered a high priority for the Nation. The preferred alternative for OU2 would effectively reduce the exposure to contaminants for these ecological receptors. EPA expects that the Tuscarora and Tonawanda Seneca Nations will be more engaged in activities

related to OU3 because of the increased fishing that occurs in this downstream area and its proximity to their reservation. The consultations are ongoing.

There are no Natural Resource Trustee restoration activities expected at this Site. NOAA has not expressed interest in this Site and no viable PRPs have been identified at this time. A Total Maximum Daily Load (TMDL) has not been developed for the Eighteen Mile Creek.

4. Develop and Refine a Conceptual Site Model that Considers Sediment Stability

A Conceptual Site Model (CSM) for Eighteen Mile Creek was developed by EPA's contractor, Ecology and Environment, and is shown here as Figure 3. The CSM demonstrates the potential pathways of human exposure to contaminants originating from the Site. There are several potential receptors at the Site, including: anglers and other recreational users of the Creek banks and channel; recreational users and outdoor workers of Upson Park; current indoor workers at the former United Paperboard Company and White Transportation properties; site visitors/trespassers and outdoor workers at the White Transportation, the former United Paperboard Company, and the former Flintkote Plant property; construction workers at Upson Park and White Transportation, the former United Paperboard Company, and the former Flintkote Plant property; and potential future residents of White Transportation and the former United Paperboard Company properties.

Sediment and Creek bank stability was considered when EPA developed remedial alternatives for OU1 and OU2 at the Site. Natural disruptive forces were considered because the low-lying areas of OU1 soils are part of the Eighteen Mile Creek floodplain, which floods during heavy rain events. Thus, contaminated sediments found in the Creek Corridor (OU2) are expected to be an ongoing source of contamination to the creek, and flooding within the Creek Corridor has the potential to redeposit contaminated sediments onto floodplains further downstream.

While the RI/FS for the rest of the Creek is ongoing (OU3), it appears that other upland sources of contamination outside the Creek Corridor to Eighteen Mile Creek are unlikely, and that the primary source of PCBs to the Creek come from the Creek Corridor (OU2).

Sediment contamination within the Creek Corridor was measured as deep as four feet in Mill Pond. With the exception of the Mill Pond area, sediment thickness in most of the Creek Channel (OU2) does not exceed two feet. In some portions, the Creek bed consists of bedrock, coarse gravel, boulders, and limited sediment is present. Data collected during the remedial investigations did not reveal trends in the concentrations of contamination based on sediment depth. This is consistent with stream characteristics, which is of a relatively narrow and steep-banked stream within the Creek Corridor that is prone to flash flooding and erosion of the Creek banks, and limited quiescent areas prone to deposition. The identification of depositional zones is a key component in the OU3 studies further downstream.

For fish tissue, no samples were collected prior to 2010 for OU2. Ten game fish and 13 forage fish were collected by EPA from the OU2 Creek Corridor. Fish fillets were sampled from the game fish collected and forage fish were composited in three separate samples. At OU2, silver redhorse (*Moxostoma anisurum*), smallmouth bass (*Micropterus dolomieu*), and walleye (*Sander*

vitreus) were collected for fillet analysis, as no largemouth bass were found. Rock bass (*Ambloplites repestris*) was the most abundant forage fish collected from OU2. Only one pumpkinseed sunfish (*Lepomis gibbosus*) was collected from OU2. The fish fillets and composite tissue samples were analyzed for TCL PCBs, SVOCs, and pesticides; and TAL metals and percent lipids.

As part of the OU2 remedial action, the Region plans to remove dams William Street and Clinton Street as they are dilapidated and unpermitted. This would increase sediment stability in the long term because it will remove man-made disruptive forces to the sediment creating depositional areas that could be released during heavy storm events.

As discussed further below, because of elevated PCB concentrations throughout sediments of the Creek Corridor, bank-to-bank remedies are being considered for sediments within OU2. Capping of deeper sediments in Mill Pond is considered under one of the alternatives; however, capping has limited utility for the remainder of the sediments in OU2 since water depth in most sections of the Creek Channel may not be adequate to support cap materials and the shallow sediment thickness is counterproductive to pre-dredging prior to capping.

Fish exposure to PCBs within Eighteen Mile Creek has been documented at least since the late 1980s. Fish above the Burt Dam, approximately two river miles from Lake Ontario, do not have access to the waters of the Lake, whereas fish below the dam can travel freely into the Lake. The New York State fish advisory for Eighteen Mile Creek does not distinguish between fish above and below the Burt Dam, though fish below the dam can have home ranges that encompass Lake Ontario, and PCB sources other than Eighteen Mile Creek can influence those fish. Be that as it may, fish collected above and below Burt Dam have been exposed to PCBs, and the Creek is clearly a source of the PCB exposure. Further investigations of the relationship between the Site and elevated PCB concentrations will be included as part of OU3.

5. Use an Iterative Approach in a Risk-Based Framework

The human health and ecological risk assessments conducted for OU2 demonstrate that actual or potential risks to human health and the environment exist at the Site, and document the need to take a response action to address those risks. For sediments within the Eighteen Mile Creek Corridor, fish consumption poses unacceptable risks primarily due to PCBs.

The preferred remedy for OU2 is an interim remedy for sediments. The preferred alternative for OU2 identifies a Sediment Action Level (SAL) for PCBs in sediment of 1 ppm, which is consistent with other sediment cleanups in New York State and is expected to be protective for direct contact. This SAL is not a final PRG for the creek sediments, as it is unclear whether addressing PCB-contaminated sediments to 1 ppm will support the recovery of fish populations; however, the practical outcome of this SAL is that a bank-to-bank remedy is needed for sediments within the Creek Corridor. Thus, it is unlikely that a subsequent remedial action will be needed for sediments within the Creek Corridor. As part of the remedial investigation for OU3, a comprehensive evaluation would be conducted to develop PRGs for the sediment in OU2 and OU3. The final remedy for OU2 and OU3 would identify the remediation goal(s) for sediment.

Remedial activities for the entire Site will be completed in phases to reduce the potential for recontamination of the Creek and the soils at the adjacent properties. The remedial action at OU2 will be appropriately phased so that source control work is conducted at the upland properties prior to the sediment work in the Creek. In order to prevent recontamination of OU1 soils from the Creek sediment, the excavation of OU1 soils will not be initiated until the excavation of the OU2 sediments. Upon completion of the OU3 RI/FS, a remedy will be selected for OU3. It is anticipated that implementation of an active remedial action for OU3 would not be initiated until after the remedial action is completed for OU2 to prevent the recontamination of the Creek downstream.

Monitored natural recovery was not considered among the range of remedial alternatives considered appropriate for the sediments in the Creek Corridor, as these sediments are considered an ongoing source to the rest of the creek. Monitored natural recovery will be evaluated in the RI/FS for OU3, either as a stand-alone action or as a component of remedial alternatives that may be combined with active remedial technologies.

6. Carefully Evaluate the Assumptions and Uncertainties Associated with Site Characterization Data and Site Models

This principle is important in the RI/FS process to ensure that all the factors influencing the decision are understood and that the uncertainties are included in the range of outcomes predicted from implementing a remedy.

Numerical models were not developed for the RI/FS (e.g., hydrodynamic, sediment transport, or groundwater flow models) because empirical data were sufficient for characterizing site conditions to the degree necessary to meet the objectives of the RI/FS.

Fish populations can be divided into two distinct groups based upon home range, above Burt Dam (Eighteen Mile Creek only) and below Burt Dam (Eighteen Mile Creek and Lake Ontario), and further investigations in OU3 will help to clarify what portion of the elevated fish tissue concentrations are attributable to the Site. Additional studies will also allow the agency to select an appropriate PRG for PCBs in sediments, protective for fish consumption.

Soil excavation depth will be determined by sampling analysis and/or to the top of the underlying refuse, a visual/physical delineation rather than a chemical one. The preferred remedy for sediments in OU2 involves the complete removal of all sediments within the Creek. Surveys were conducted during the NYSDEC RI to calculate the sediment volumes. Therefore, the uncertainties associated with sediment characterization data are small.

The basis of future land use scenarios includes the City of Lockport Comprehensive Plan (Nutter Associates 1998) and the final Tourism Focus Area Nomination Study under the New York State Brownfield Opportunity Area Program (Bergmann Associates 2015).

7. Select Site-Specific, Project-Specific, and Sediment-Specific Risk Management Approaches that will Achieve Risk-Based Goals

The Proposed Plan for this operable unit describes the three alternatives evaluated for remediation of contaminated sediment in the Eighteen Mile Creek Corridor. The alternatives are: no action; excavation; and combined excavation and capping.

The Creek sediments contain high levels of contamination, which pose an unacceptable risk and the contaminated sediments have the potential to migrate downstream. Therefore, the No Action alternative is not appropriate. Due to water depths, the areas amendable to capping under the combined capping and excavation alternative, is limited to only the Mill Pond Area.

The proposed preferred alternative, complete sediment excavation to 1 ppm PCBs, is the most appropriate remedy for the Creek sediments. Compared with remedies that leave the contaminated sediment in place (i.e., capping), excavation removes the contaminated sediment and eliminates the potential for future exposure and transport of contaminated sediment more effectively. Excavation is effective in reducing risks to human and ecological receptors by removing the contaminated sediments. While a final sediment remedy is not being selected at this time, the sediment actions associated with OU2 will be support the selection of a final remedy for OU3.

8. Ensure that Sediment Cleanup Levels are Clearly Tied to Risk Management Goals

The bank-to-bank remediation of the sediments in the Creek Channel would remove all of the contaminated sediments.

The FS describes the RAOs for OU2 of the Site, which are as follows:

- Reduce the cancer risks and non-cancer health hazards for people eating fish from the Eighteen Mile Creek by reducing the concentration of PCBs and other site related contaminants in fish.
- Reduce and/or eliminate risks to ecological receptors by reducing exposure to contaminated soils/fill and sediments.
- Reduce or eliminate potential human exposure to contaminated soils/fill at the Flintkote, White Transportation, and former United Paperboard Company properties to levels that are protective of commercial/industrial use, and protective of the environment.
- Reduce or eliminate exposure to contaminated soils/fill at Upson Park to levels that are protective of recreational use, and protective of the environment.
- Reduce or eliminate the migration of contamination in soils/fill from the former Flintkote Plant property, the White Transportation property, the former United Paperboard Company property, and Upson Park to adjacent properties, the Eighteen Mile Creek, and groundwater.

The alternatives under consideration for OU2 will address all the sediment RAOs with the

exception of the fish consumption RAO. As a result, for reasons discussed above, the OU2 remedy will be an interim remedy for sediments.

9. Maximize the Effectiveness of Institutional Controls and Recognize their Limitations

ICs are non-engineered instruments, such as administrative and/or legal controls, that limit the potential for human exposure to a contaminant by restricting land or resource use.

There is currently an "Eat None" advisory for the entire Eighteen Mile Creek issued by NYSDOH. EPA will continue to coordinate with the State on this matter. The limitations of institutional controls will be evaluated and addressed as part of the final remedy for this Site; however, Eighteen Mile Creek below Burt Dam is locally known as a popular and productive recreational fishing area, in spite of the fishing advisory. The region is well aware of the limitations of relying on the fishing advisory alone, and will consider more directed outreach for this particular location as part of its remedial planning.

Since contaminated soil above acceptable levels would remain on the properties following remediation, institutional controls would be implemented and may include environmental easements/restrictive covenants, deed notices, and/or zoning restrictions to limit future use of the properties.

10. Design Remedies to Minimize Short-Term Risks while Achieving Long-Term Protection

As mentioned previously, short-term actions have already been taken, including the implementation of the OU1 ROD (e.g. relocation of impacted residents) and the existing NYSDOH fish consumption advisory. The preferred alternative for OU2 includes excavating the Creek sediments, which will achieve long-term protection by removing the sources of contamination in the Creek and reducing contaminant concentrations in the sediment in OU2 as well as OU3. The combination of an excavation and capping remedy for the upland soils at OU2 will achieve long-term protection because it will reduce the potential for human and ecological exposure to the contaminants. The soil remedy will also reduce the potential for recontamination of the Creek.

11. Monitor During and After Sediment Remediation to Assess and Document Remedy Effectiveness

In addition to conducting long-term monitoring to visually inspect the stabilization and cover system periodically, post-remedy monitoring would be conducted to ensure remedy effectiveness. During the remedial design, additional data may be collected to further establish baseline conditions. In addition, specifications for the monitoring data that would be collected during the remedial construction and long-term to demonstrate the effectiveness of the remedy in meeting the RAOs would be addressed during the design phase. As this is an interim remedy for sediments, overall remedy effectiveness will be assessed in conjunction with the remedial actions selected in the final remedy. The region expects to use regular monitoring of fish tissue concentrations as one measure of remedial performance.

**Figure 1-2 Operable Unit Overview, Eighteenmile Creek Superfund Site
Lockport, NY**

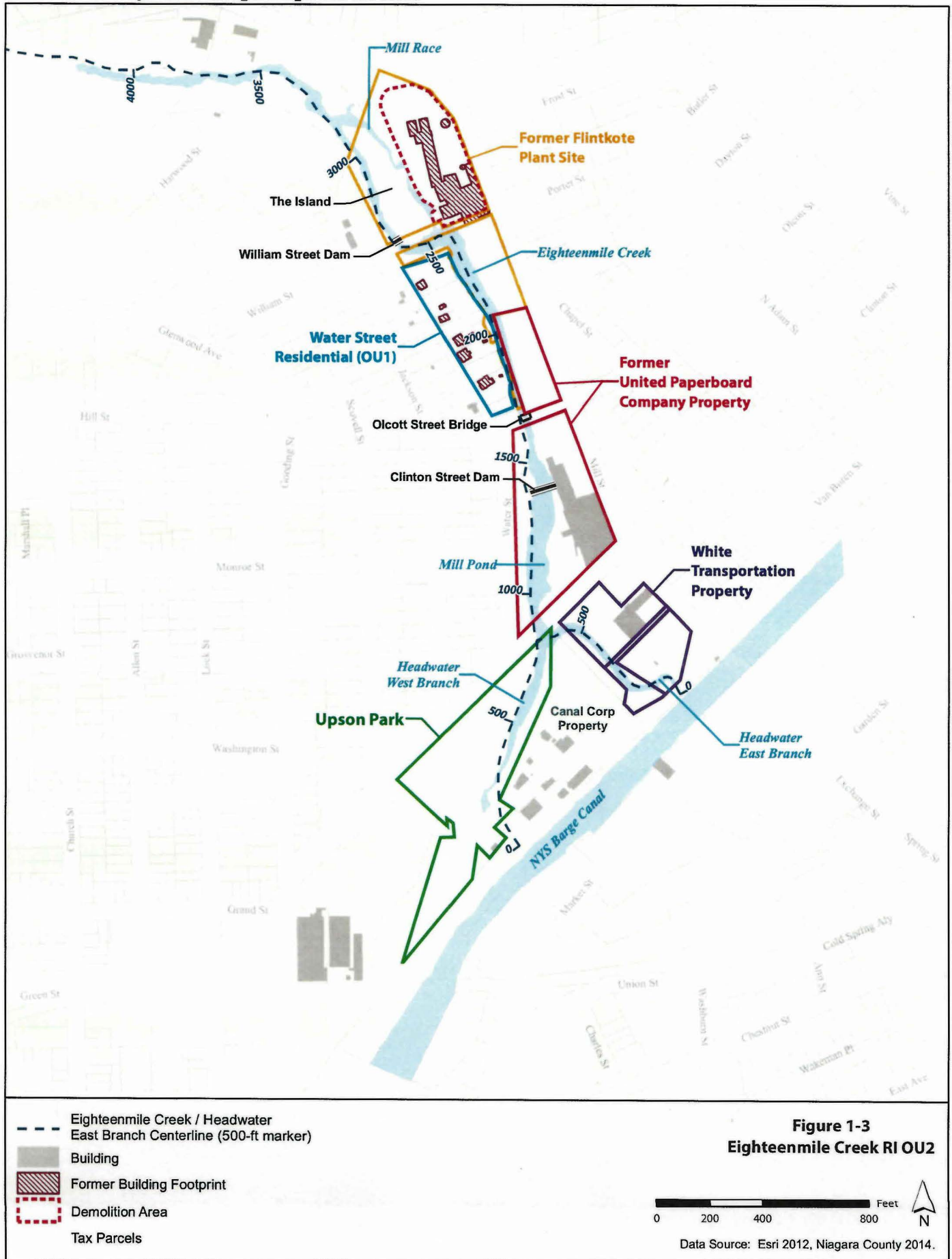


Figure 1-3
Eighteenmile Creek RI OU2

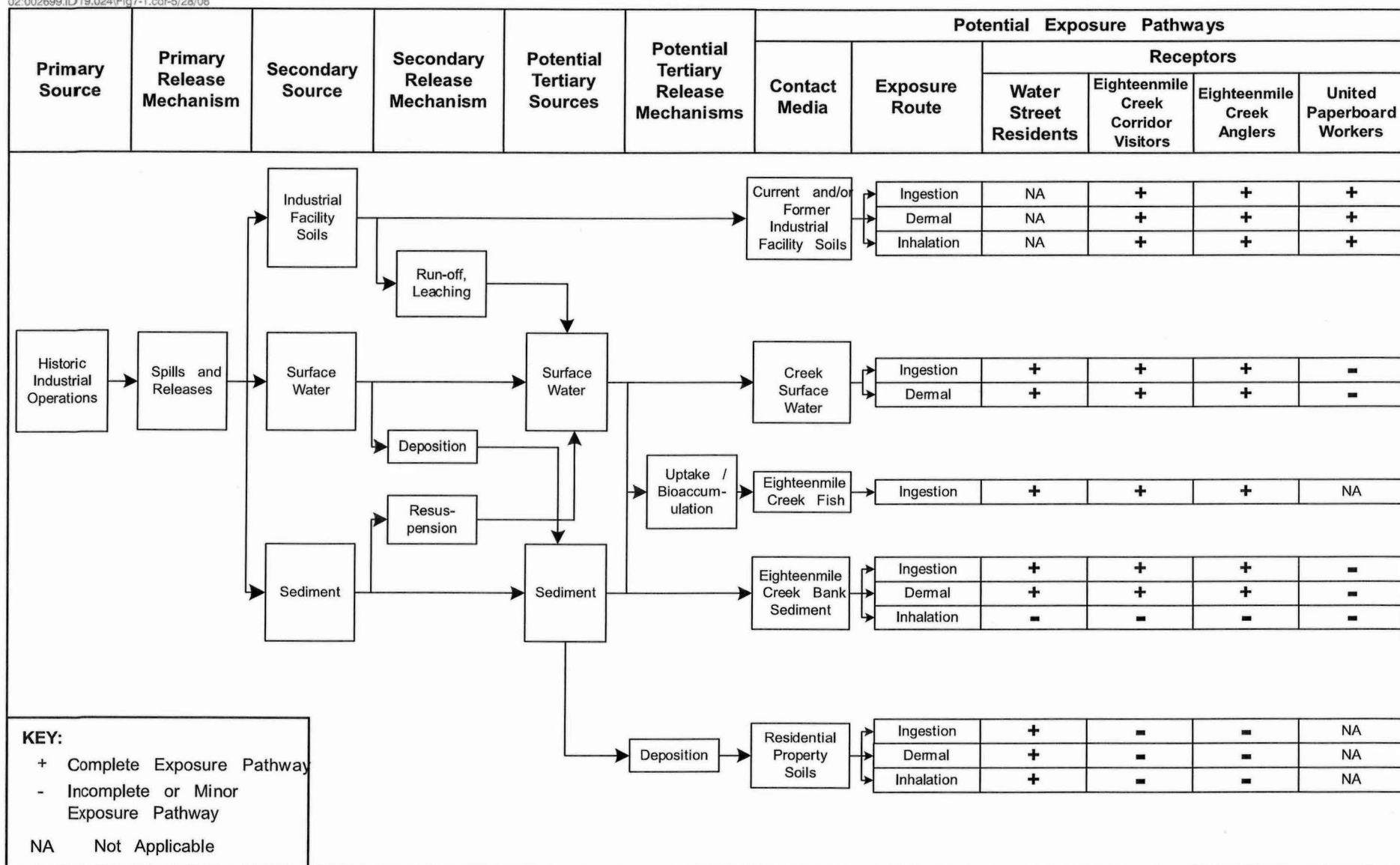


Figure 7-1 Conceptual Model of Potential Human Exposures to Contaminants in the Eighteenmile Mile Creek Corridor Site, Supplemental Remedial Investigation